Available online at www.sciencedirect.com

ScienceDirect

Procedia Social and Behavioral Sciences 15 (2011) 2977–2981

Procedia Social and Behavioral Sciences

WCES-2010

Teacher trainees and social educators'choices of methodological strategies in their training process

Cipriano Romero-Cerezo[a], Javier Villoria[a]*, Eugenio Hidalgo[a]

[a]*Faculty of Education, University of Granada, Granada 18071, Spain*

Abstract

The need to adapt teaching methodologies to the European Higher Education Area lead us to look for the best approaches to guarantee the training of future teachers and social educators. In our examination of methodological strategies, we have taken into account the opinions of 290 students with, establishing the most relevant factors and determining how they discriminate. This is a descriptive and exploratory study, which offers five factors: collaborative work, portfolio, seminar, contract, assistance and counselling. The discrimination is between the contract and the portfolio, showing a difference of interests between the groups of students according to their specialities.

Keywords: teaching methodologies; portfolio; collaborative work group; seminar; learning strategies; learning contract; counselling; European Higher Education Area

1. Introduction

The establishment of the European Higher Education Area together with the experiences obtained from the implementation of the ECTS (European Credit Transfer and Accumulation System) have required new approaches to be taken on board in the teaching practice. New methodological options have been adopted which assure quality and social usefulness to Higher Education (Consejo de Coordinación Universitaria, 2006). This change implies a new type of teaching style where students gain more relevance. Teachers have to adapt their teaching to these changes by giving more prominence to students, making use of learning strategies that foster learning autonomy in the development of student personal work (Rué, 2007), getting involved in the students' active learning and promoting collaborative work (Fernández, 2006), and tutoring and orienting students to make the best of their study and tasks (García, 2008). This teaching and learning approach is student centred and is based on a clearly defined teaching plan with fixed objectives and organised tasks prepared for the achievement of competencies (Bolivar, 2007). This entails giving answers to students' requests in their personal development and professional orientation, adopting methodological options to encourage sequenced learning activities and placing the emphasis on the strategies and resources needed to acquire the aforementioned competencies (De Miguel, 2006).

To carry out an innovative teaching experience in the Faculty of Education of the University of Granada (Spain) we considered the following as methodological strategies:

- *Collaborative group work,* where students participate in small groups to prepare and defend tasks that help to maximise their learning. The teacher previously plans the task, which the students develop in a cooperative, coordinated and interdependent way (Romero and Salicetti, 2009);

* Cipriano Romero-Cerezo. Tel.: +34 958 246 360; fax: + 34 958 240 919.
E-mail address: villoria@ugr.es.

1877–0428 © 2011 Published by Elsevier Ltd. Open access under CC BY-NC-ND license.
doi:10.1016/j.sbspro.2011.04.226

- *the portfolio*, a relevant tool not only to gather materials and learning evidences (Rué, 2007), but also to acquire assessment abilities and self-reflection (Colén, Giné and Imbernón, 2006), and involve the students in their learning (Romero, Zurita and Zurita, 2010);
- *learning contract*, which regulates the teaching/learning process by means of an agreement between the teacher and the student to achieve the objectives planned through autonomous working proposals (Almeida and César, 2006), with teacher supervision in a set period of time (Lobato, 2006; Villoria, 2004);
- *the seminar*, or a reduced group, which provides more opportunities to debate, exchange information and discussions on different topics and produces more interesting conclusions for the participants (Alfaro, 2006);
- *the tutoring,* which is a very interesting tool to stimulate, guide, support and evaluate the learning and the integral development of the student (García, 2008), and
- *the teaching assistant board*, where teaching staff can share academic information and data, communication among colleagues is facilitated and the monitoring of academic progress of the student is encouraged (Correa and Paredes, 2009).

2. Methodology

Objectives. To determine the students' opinions about methodological strategies, students must establish which are, the most relevant factors for the academic work they have to produce, the type of relationship that exists between the factors and how they discriminate.

Design. This is a descriptive, exploratory and non-experimental study. A questionnaire was passed to Teacher Training and Social Education students to gather the information (Hidalgo, 2006).

Population is intentional and incidental, with a total number of 290 students from seven different specialities grouped as follows: 26 from Pre-Primary Education (9%); 55 from Special Education (19%); 30 from Foreign Languages (10.3%); 47 from Primary Education (16.2 %); 40 from Physical Education (13.8%); 58 from Musical Education (20%) and 34 from Social Education (11%).

Instruments. The data gathering was completed by means of a questionnaire. It had 24 items with four ordered response levels for each answer: "1" strongly disagree, "2" disagree, "3" agree and, "4" for strongly agree. The questionnaire was previously validated (Romero, Cepero, López and Ortega, 2009) and includes the following items: 3 about the contract, 5 the portfolio, 7 group work, 4 the seminar, 2 the tutorial and 2 about the teaching assistant platform. The Cronbach Alpha was used to check the reliability of items, obtaining a very high value of .89. The items discriminate adequately, obtaining correlations between each item and the item-total of higher than 0.30 (fluctuating between .31 in I09 item and .57 in I11 item). Consequently this questionnaire is reliable and discriminates adequately.

Procedure. The participants were duly informed about the how to proceed with the questionnaire. Special emphasis was placed on not leaving any item blank and students were told that the questionnaire was anonymous and participation voluntary. It took around twenty minutes to complete the questionnaire.

Data analysis. For the statistical analysis package SPSS 15.0 was used. A factorial, descriptive, inferential and discriminate factor analysis was carried out.

3. Results

3.1. The most relevant factors for the academic work the students have to elaborate

A factorial analysis has been carried out to obtain the ideas contained in the items. KMO sampling adequacy test (Kaiser-Meyer-Olkin) with a value of .88 and Bartlett's test of sphericity, the Pearson Chi-square test is significative: $\chi 2\,(325, 290) = 2044.74$, $p = .00$, proving the factorial analysis is pertinent. The extracting method has conversed in 7 interactions, providing five components that explain 62.04% of the variance and shows interest for the interpretation of our study, omitting the loads below .4.

Factor 1, *collaborative group work* with eight items, is the dominant factor and the best one to clarify the students' methodological options. It explains 30.75% of the variance. It has high loads, which fluctuate between .52 and .70 and a good level of reliability ($\alpha = .81$). The items and their saturation are: I14 (.70), I13 (.67), I10 (.61), I16 (.59), I15 (.58), I17 (.55) and I12.

Factor 2, *the portfolio*, covers five items that explain 11.03% of the variance, with high loads and a good reliability ($\alpha = .78$). The items and their saturation are: I07 (.73), I06 (.66), I08 (.61), I05 (.54) and I09 (.53).

Factor 3, the *seminar* with four items, explains 8.83% of the variance, with high reliability (α = .72) and loads. The items and their saturation are: I18 (.70), I19 (.69), I21 (.58) and I20 (.52).

Factor 4, *student learning contract* with four items, explain 6.12% of the variance, with an acceptable reliability (α = .70) and high loads. The items and their saturation are: I02 (.67), I03 (.66), I01 (.63) and I04 (.60).

Factor 5, ideas related to "student support and orientation" with four items just explain 5,49% of the variance, with medium loads and an acceptable value in its reliability (α = .67). The items and their saturation are: I24 (.73), I23 (.69) and I22 (.52).

Factor 1, *collaborative group work*, is the most valued one (M= 3.20 and SD= .05). Infant Education students (M= 3.42 and SD= .40) esteem it the most and on the contrary Social Education students give it the lowest score (M= 3.09 and SD= .58). Factor 5, *student support and orientation*, comes in second place (M= 3.16 and SD= .46), being more valued by Special Education students (M= 3.35 and SD= .45) and less by Social Education students (M= 3.05 and SD= .54), Primary Education students (M= 3.06 and SD= .62) and Music Education students (M= 3.08 and SD= .51).

The portfolio, factor 2, receives the lowest score (M= 2.94 and SD= .50), even though it is valued positively by Infant Education students (M= 3.27 and SD= .41) and not so much by Physical Education students (M= 2.68 and SD= .63). Significative differences have been found in this factor between the different groups of students F (6, 283)= 2.83, p = .01. Cheffé *post hoc* test shows that these differences are clearly significative between the groups mentioned before.

Factor 3, *the seminar*, comes in third place (M= 3.04 and SD= .50). It scores the highest punctuation with Infant Education students (M= 3.23 and SD= .41) and the lowest with Physical Education students (M= 2.93 and SD= .52). In this case there are no significative differences between the groups.

Student learning contract, factor 4, is in penultimate position (M= 3.04 and SD= .50). Special Education students score this item higher (M= 3.22 and SD= .40), and well as Infant Education students (M= 3.21 and SD= .31); for Social Education students it has little interest. There are significant differences between groups F (6, 283)= 7.30, p = .00 and through Cheffé *post hoc* test. Those differences are between Special Education students with Social Education students (p= .00) and with Music students (p= .01); between Infant and Social Education (p= .00), Primary Education with Social Education (p= .01) and between Physical Education with Social Educations students (p= .00).

3.2. Discriminant analysis

A discriminate analysis was undertaken with the factors obtained. Box's M test produced information about heteroscedasticity, which made necessary to carry out the analysis as the differences were significant (Box's M =35.89, F (5, 75984.65) = 4.50, p = .00).

Wilks' lambda distribution was chosen. In our study factors 4 and 2 are the best ones to discriminate: F (6, 283)= 7.30, p = .00 and F (6, 283)= 5.86, p= .00. The self-values of the canonical discrimination provide the discriminate score deviations between groups and factors. The data show a function 1 with a self-value of .34, a variance of 65.4% and a correlation of .44. This verifies the existence of discrimination and a variance between the groups with respect to the two functions. A Wilks' lambda (.88) is confirmed with a Chi-square value of $\chi 2$ (6, 290) = 37.01, p = .00.

For the majority of discriminatory factors and their comparison with the different specialities, we chose first the matrix of the structure with a higher correlation between the discriminatory variables and the canonical discrimination function. It can be observed that Factor 4 discriminates more in Function 1 (r= .88) and Factor 2 in Function 2 (r= .99). They are the most relevant for comparing with the different groups. The function centroids let us measure the value of the loads of each of the groups with respect to the functions, highlighting the following:

a) Special Education (.57), Physical Education (.44) and Primary Education students (.32) accept the learning contract in a more positive way. On the other hand, Social Education (-.81), followed by Foreign Language (-.45) and Music Education students reject it.

b) Infant Education students (.74) valued the use of the portfolio, which was rejected by students of Physical Education (-.45) and Music (-.21).

4. Discussion and Conclusions

When we have to establish the methodological strategies for teacher trainees and social educators, the factorial analysis of the data obtained indicate that the most characteristic features of the students' opinions about their training are: Factor 1, *collaborative work group*; factor 2, the *portfolio*; factor 3, *the seminar*, factor 4, the *learning contract* and factor 5, *student counselling and advising*.

Collaborative work group, factor 1, is the most valued methodology. This includes the following components: student commitment with the work, elaborating and developing a common project, spending time in group meetings, defending the work in front of the class, reflecting and critically evaluating the work done. An, Kim and Kim (2008) found five factors students perceived about group work: individual responsibility, affective support, leadership, work consensus and clear guidelines about the work to do. Romero (2009) and Romero and Salicetti (2009) provided evidence to suggest that group work contributed to the development of competencies: their care for doing things correctly, being involved in the research, managing the information, administering the time to prepare and elaborate the work, defending it in front of the classroom and participating in the debates which foster communicative abilities and reinforce analysis and reflection. Likewise Andreu, Sanz and Serrat (2009) found that students perceived group work and cooperative activities to be very positive.

The second factor with high levels of student approval is counselling and advising. Students do value the advice and counsel they may receive from teachers and the teaching assistant platform. García *et al.* (2005) and Romero, Zurita and Zurita (2010) demonstrated the great importance students give to tutorials as an orienting procedure, which favours formative processes; it is transformed into a learning guide. Similarly, Coll, Mauri and Onrubia (2006) discovered that students emphasize the usefulness of the virtual classroom to gain permanent access to subject material resources, tasks and activities, highlighting the easy access and the functioning possibilities it offers. Sierens *et al.* (2009) found positive correlations among teaching methodologies that encourage student autonomous work with teacher support and the capabilities the students may achieve in those activities that need self-regulation.

Student contract and the portfolio constitute the factor with the highest level of discrimination among the different Teacher Training specialities, despite the fact that it received the lower scores. There are significant differences and it is important to establish which factors most characterise each speciality under study. There is evidence to suggest that Special Education, Physical Education and Primary Education students are more committed and assume more responsibility in their learning process. They previously establish which contents they are going to develop and how they will be evaluated. In contrast, Social Education students are more reluctant to fulfil their obligations. They prefer to develop the learning without any systematization or control.

Pre-primary Education students considered the use of the portfolio as a learning tool in autonomous work to be of great interest and benefit; in contrast, Physical and Music Education students have a negative opinion about it.

This paper shows students' opinions about the options they prefer in terms of the use of methodological strategies in their training processes. We have established which factors have higher levels of impact, the type of relationship that exists among them, and finally, which factors discriminate among the different specialities in Teacher Training. As a future study, we consider the establishment of an intervention program to be of interest. Here, we could contrast students' opinions at the beginning, during and at the end of the experience.

References

Alfaro, I. (2006). Seminarios y talleres. En M. De Miguel (Ed.). *Metodologías de enseñanza y aprendizaje para el desarrollo de competencias* (53-81). Madrid: Alianza.

Almeida, P. y César, M. (2006). Um contrato didáctico inovador en aulas de Ciencias do 10º ano de escolaridade. *Revista Electrónica de Enseñanza de las Ciencias*, 5(2), 356-377.

An, H., Kim, S., & Kim, B. (2008). Teacher perspectives on online collaborative learning: Factors perceived as facilitating and impeding successful online group work. *Contemporary Issues in Technology and Teacher Education*, *8* (1). Retrieved June 1, 2009, from http://www.citejournal.org/vol8/iss4/general/article1.cfm

Andreu, L., Sanz, M., Serrat, E. (2009). Una propuesta de renovación metodológica en el marco del Espacio Europeo de Enseñanza Superior: los pequeños grupos de investigación cooperativos [electronic version]. REIFOP, 12 (3), 111-126. Retrieved April 2, 2010, from http://www.aufop.com/*aufop/uploaded_files/articulos/1254437275.pdf*

Bolivar, A. (2007). La planificación por competencias en la reforma de Bolonia de la educación superior: un análisis crítico. *ETD – Educação Temática Digital, Campinas,* 9, 68-94.

Cano, E. e Imbernon, F. (2003). La carpeta docente como instrumento de desarrollo profesional del profesorado universitario. *Revista Interuniversitaria de Formación del Profesorado, 17*(2), 43- 51.

Coll, C., Mauri, T. y Onrubia, J. (2006). Análisis y resolución de casos-problema mediante el aprendizaje colaborativo. *Revista de Universidad y Sociedad del Conocimiento (RUSC)*. 3, (2) [electronic version]. UOC. Retrieved February 2, 2008, from http://www.uoc.edu/rusc/3/2/dt/esp/coll_mauri_onrubia.pdf.

Consejo de Coordinación Universitaria (2006). *Propuestas metodológicas para la renovación de las metodologías educativas*. Madrid: MEC. Retrieved May 2, 2007, from http://www.mec.es/educa/ccuniv/html/metodologias/.

Correa, J.M y Paredes, J. (2009). Cambio tecnológico, usos de plataformas de e-learning y transformación de la enseñanza en las universidades españolas: la perspectiva de los profesores. *Revista Psicodidáctica*, 14(2), 261-278.

De Miguel, M. (2006). Metodologías para organizar el aprendizaje. Segundo objetivo del Espacio Europeo de Educación Superior. *Revista Interuniversitaria de Formación del Profesorado, 20* (3), 71-91.

Fernández, A. (2006). Metodologías activas para la formación de competencias. *Educatio siglo XXI,* 24, 35- 6.

García, N. (2008). La función tutorial de la Universidad en el actual contexto de la Educación Superior. *Revista Interuniversitaria de Formación del Profesorado*, 22 (1), 21-48.

García, N., Asensio, I., Carballo, R. García, M. y Guardia, S. (2005). *Guía para la labor tutorial en la universidad en el Espacio Europeo de Educación Superior*. Madrid: Universidad Complutense. Retrieved April 25, 2007, from http://www.ucm.es/info/mide/docs/informe.htm.

Hidalgo, E. (2006). *Estrategias de recogida de información en Investigación Educativa*. Granada: CD Universidad.

Lobato, C. (2006). Estudio y trabajo autónomos del estudiante. En M. De Miguel (ed.), *Metodologías de enseñanza y aprendizaje para el desarrollo de* competencias (191- 223). Madrid: Alianza.

Romero, C. (2008). El portafolios y el trabajo de grupo: una experiencia del crédito ECTS en la formación del magisterio especialista en Educación Física [electronic version]. *REIFOP,* 9 (2). Retrieved February 4, 2009, from http://www.aufop.com/aufop/revistas/arta/digital/93/446.

Romero, C.; Cepero, M.; López, M.; Ortega, J.L. (2009). Evaluation of Methodological Teaching Strategies for Students of Different Specializations in Education Sciences, Social Education and Physiotherapy. *The International Journal of Interdisciplinary Social Sciences,* 4 (9), 139-154.

Romero, C., y Salicetti, A. (2009). La contribución del trabajo grupal de los estudiantes como estrategia docente en la formación del maestro especialista en educación física [electronic version]. *Revista iberoamericana de educación*, 49(8). Retrieved July 23, 2009, from http://www.rieoei.org/deloslectores/2952Cerezo.pdf.

Romero, C., Zurita, F. y Zurita, F. (2010). Autonomía y orientación en el Espacio Europeo de Educación Superior mediante el portafolio y la tutoría. *ESE, Estudios Sobre Educación*, 19, 261-282.

Rué, J. (2007). *Enseñar en la Universidad. El EEES como reto para la Educación Superior*. Madrid: Narcea.

Sierens, E., Vansteenkiste, M., Goossens, L., Soenens, B. & Dochy, F. (2009). The synergistic relationship of perceived autonomy support and structure in the prediction of self-regulated learning. *British Journal of Educational Psychology*, 79 (1), 57-68.

Villoria, J. (2004). Proyecto de lengua. En J. Calvo (coord.), *La enseñanza en la Universidad centrada en el aprendizaje* (pp. 177-189). Granada: Ave María.